V. EVALUATION OF ISSUES: THEMES AND DIRECTION

The ADG evaluated each of the alternatives developed for the four zooms in the study area. The factor specialty groups used the evaluation factors described in Chapter III to evaluate each alternative. The factor specialty groups placed the alternatives on a continuum from best to worst according to the factor they were considering. All twelve evaluation factors were presented to the entire ADG with the alternatives positioned on the continuum according the to deliberations of the factor specialty groups. Questions from the ADG on the evaluations presented were entertained and discussion, mainly in the form of clarification, was offered. This communicated the important aspects of each alternative in terms of the measures defined through the evaluation factors. The resultant continuums are shown in Appendix D by issue category.

As the results of these analyses were presented, certain themes based upon the trends in the analyses surfaced. These themes are central to what was being sought from the ADG in support of the EIS process. The resulting themes, organized by issue category, are presented in the remaining sections of this chapter.

PROPERTY RIGHTS

The comprehensive plans of Lee and Collier counties, while adding a layer of further restriction from the constitutional perspective, were viewed by the ADG's property rights advocates as acceptable, having been developed through an intensive participatory political process. The comprehensive plans have established landowner expectations of potential property values and land uses. Any alternative being more restrictive than the comprehensive plans was viewed as reducing property rights. The evaluation factors applied to the alternatives were (1) fair market value, (2) expectation of land use and value, and (3) vested rights.

At one end of the spectrum of property rights are the landowner's constitutional rights allowing the landowner to use his or her property as he or she chooses without harming others. But for the good of the community, government, using zoning and other means, has placed additional restrictions on property owners. The factor specialty group looked for alternatives that would minimize these types of restrictions.

The comprehensive plan is considered the standard by which all other alternatives must be compared. The comprehensive plan alternative, was generally regarded as the best alternative in terms of property rights. However, several alternatives were considered equal or better to the comprehensive plan by expanding the rights of the property owner. For instance, Alternative 4A of Zoom B showed a more realistic urban area designation for areas surrounding Immokalee than that estimated by the comprehensive plan. Those alternatives typically placed at the worst end of the continuum were those that presented restrictive criteria, expanded preservation areas, and decreased urban and agricultural areas. For example, Alternative 5 for Zoom A included detailed

criteria and was considered over restrictive within the property rights category. Thus, the more restrictive the criteria the less appealing in terms of property rights.

WATER MANAGEMENT

The factor specialty group applied seven evaluation factors addressing flooding, flowways, and water storage. Several presentations were made to the ADG concerning water management issues in the study area. One such study was the South Lee County Watershed Plan coordinated by the South Florida Water Management District (SFWMD). This plan presented several proposed alternatives with respect to water management. Likewise, the Big Cypress Basin Watershed Study that addressed many of the same issues was conducted in Collier County. Also, the Estero Bay Agency on Bay Management (ABM) presented an alternative restoring and preserving the connectivity of habitats and flowways.

The concepts of these studies were included in a number of alternatives. Also, one member of the ADG presented a flowway concept that was referred to in many alternatives. This flowway concept emphasized recognition and preservation of historic flow patterns and isolated wetlands. The best alternatives typically provided flowway restoration and maintenance concepts. Alternative 4B for Zoom B raised much discussion during several meetings. This alternative applied South Lee County Watershed Study's berm alternative. Although the berm was controversial, it was part of a proposed water management alternative.

WATER QUALITY

The factor specialty group applied four evaluation factors: (1) pollution loading, (2) freshwater pulses, (3) habitat loss, and (4) groundwater impacts. Several presentations were made to the ADG addressing water quality issues in the study area. All presenters stated that water quality is expected to continually decline in the study area. Water quality indicators such as vegetation and other marine life attest to decline that has already occurred. Freshwater pulses have impacts on certain fisheries. Heavy metals and other nutrient loadings impact marine habitats. Impervious surfaces such as parking lots impact groundwater recharge and pollution loading.

Land use was the basis for evaluating impacts to water quality. Alternatives that allowed more development were not favorable to water quality. Thus, the comprehensive plan was typically the worst alternative in terms of water quality impacts. Other alternatives proposed ways to decrease the duration and volume of freshwater pulses. Many alternatives suggested improving and maintaining isolated wetlands and the connectivity of habitats and flowways, all of which were perceived to improve water quality.

ECOSYSTEM FUNCTION, WILDLIFE HABITAT, AND LISTED SPECIES

The factor specialty group relied heavily on GIS outputs in their evaluation of alternatives. Many resource agencies such as the Florida Game and Freshwater Fish Commission (GFC), U.S. Fish and Wildlife Service (FWS), and the U.S. Environmental Protection Agency had data and maps that were applied to the alternatives. The use of GIS provided the group a relatively clear picture of the quantitative and spatial impacts of alternatives and allowed the group to use their best professional judgment to determine the qualitative impacts. The factor specialty group evaluated alternatives on such things as impacts to panther habitat, listed species, rookeries, seasonal wetlands, and native plant communities.

Natural resource agencies have collected data, conducted field surveys, written many plans, and drawn many maps. Examples of resource information utilized by the factor specialty group included the Closing the GAPs in Florida's Wildlife Habitat Conservation System (GFC), the Draft Multi-species Recovery Plan for South Florida (vol. 1) (FWS), the Florida Panther Habitat Preservation Plan (Florida Panther Interagency Committee), the Estero Bay Agency on Bay Management's Conservation Lands Map, and National Wetland Inventory Maps (FWS). All data and information were available and able to be compiled into maps that were GIS applicable. The outputs of the GIS were a foundation for the evaluations of this factor specialty group. However, the factor specialty group did not make decisions on numbers alone. Many of the alternatives and their respective land use types had criteria and standards associated with them. These criteria influenced the evaluations of this group. For example, criteria that called for non-intensification of agricultural activities was viewed as favorable to wildlife. This strategy was used to allow for continued agricultural activity while addressing wildlife concerns. An example of this type of criteria was found in Alternative 2B for Zoom B.

Alternatives that increased habitat preservation, addressed restoration of habitat areas, or considered criteria for existing land uses that would improve habitat were ranked high by the group. Alternatives that did not address these items were ranked low for ecosystem function, wildlife habitat, and listed species. Also, alternatives that expanded urban areas and did not propose habitat protection criteria on agricultural and residential areas east of Interstate 75 were ranked low in terms of this issue. Thus, the comprehensive plan was typically viewed as least favorable for this factor.

REGULATORY EFFICIENCY AND EFFECTIVENESS

The factor specialty group initially found the evaluation of this issue to be complex in terms of being able to evaluate alternatives. However, the ADG pressed forward, recognizing that regulatory efficiency and effectiveness are central and essential to the regulatory review and permitting process. This prompted the factor specialty group to offer some level of comparative analysis. The two evaluation factors applied by the factor specialty group were (1) permit review time and level of effort and (2) preidentified impacts. The factor specialty group anticipated that the alternatives maps would reflect areas of regulatory difficulty by locations of contention not

being identified by any particular land use. This was not the case. All alternatives had all locations identified with some land use type as well as associated criteria. Thus, the methodology by which the factor specialty group had hoped to measure permit review time and level of effort was unable to distinguish among alternatives.

At the tenth meeting, the factor specialty group with the assistance of additional ADG members went to the drawing board to identify new means by which to more appropriately measure the issue of regulatory efficiency and effectiveness. Since the new measures were defined at the tenth meeting, the group applied a subset of these measures for which tabular information was available. The new approach was applied to Zoom B of the study area. An alternative that was considered the best in terms of regulatory efficiency and effectiveness for Zoom B placed the fewest acres of wetlands and panther habitat at risk.

ECONOMIC SUSTAINABILITY

The factor specialty group considered the comprehensive plan the standard to compare all alternatives. The seven factors applied to evaluate the alternatives were (1) job creation, (2) home affordability, (3) cost of living, (4) property tax base, (5) cost to implement, (6) increased taxes, and (7) environmental justice.

Several economic growth models were suggested for use in the evaluation of alternatives. However, data were not readily available for the development and use of such models. The composition of the factor specialty group allowed them to apply their best professional judgment in the evaluation of alternatives. Similar to the issue of property rights, the county comprehensive plans established some expectation of economic growth. The comprehensive plans and those alternatives that expanded upon the comprehensive plans growth potential were viewed as the most favorable for economic sustainability.

Alternatives that constrained the intent of the comprehensive plans were regarded as poor for economic sustainability. For instance, the criterion of nonintensification of agricultural activities was viewed as constraining job creation. The factor specialty group provided the ADG an example. The farming of row crops requires seasonal labor during the fall, winter, and spring but not in the summer. Whereas, citrus farming requires yearround labor. Thus, conversion to citrus would provide yearround employment rather than seasonal employment. Restricting the location of homes also constrains the potential number of homes that could be built, ultimately decreasing the ability to afford a home. A general theme of the evaluations is the more criteria and standards the less favorable for economic sustainability.

LOCAL LAND USE POLICY

The factor specialty group addressing the issue category of local land use policy evaluated the alternatives developed for zooms A, B, C, and D of the study area. The factor specialty group

considered the comprehensive plan the standard by which all other alternatives are evaluated as noted in the evaluation factors. The factors applied in the evaluation of alternatives were (1) significance of conflicts with the local land use plans and regulations and (2) hurricane preparedness evacuation routes. The comprehensive plan is the local land use policy, thus, it is typically the best alternative. Alternatives with more restrictive land use criteria ranked lower than the comprehensive plan. Hurricane preparedness was discussed and brief presentations were made on this topic. This continues to be an important issue in southwest Florida, which has a deficit of shelters and long evacuation times. The alternatives offered typically did not present a great deal of variability with respect to hurricane preparedness. For instance, all the alternatives developed for Zoom B of the study area were all viewed to be equal in terms of addressing hurricane preparedness. None of them proposed any significant strategies for improving hurricane preparedness.

AVOIDANCE OF WETLAND IMPACTS

The factor specialty group applied two factors in the evaluation of alternatives for the study area: (1) total acres at risk from impact and (2) total acres at risk weighted by function. The factor specialty group relied on GIS maps and tables of the alternatives to determine the acres at risk. Those alternatives placing the least number of acres of highly functional wetlands at risk are favorable.

Using best professional judgment, the factor specialty group categorized wetlands by perceived functionality into the categories of high-, medium-, and low-functioning wetlands. Also, the group established risk factors based on land use types (i.e., agricultural, residential, and urban). Risk factors were typically higher for urban and residential land uses. Thus, alternatives proposing the greatest number of urban and residential land use acres were typically considered the worst in terms of avoiding wetland impacts. Alternative 5 for Zoom A was an example of an alternative with favorable characteristics relating to this factor. This alternative used both land use features and criteria to put relatively few high-functioning acres at risk. Typically, the comprehensive plans were among the alternatives that placed the most wetland acres as well as function at risk.

MITIGATION

The factor specialty group applied two factors in the evaluation of alternatives for the study area: (1) total acres of opportunity and (2) total acres of opportunity by level of wetland functionality. The factor specialty group relied on GIS overlays of the alternatives and wetlands to determine the acres at risk and the functionality of those wetland acres at risk. The wetland acres at risk were then compared with the acres of opportunity for mitigation (proposed preservation acres). Also, the functionality of the wetland acres at risk was compared with the functionality of the wetland acres being proposed for preservation.

Those alternatives placing less acres of highly functional wetlands at risk are favorable. This is addressed specifically by the issue category of avoidance of wetland impacts. However, the values derived in the calculations for avoidance of wetland impacts are utilized in the calculations performed for mitigation. Mitigation is somewhat reliant upon the issue of avoidance of wetland impacts. Also, those alternatives that provide for greater acres of wetland mitigation to offset those impacted were favored by the factor specialty group. The functionality of those mitigation acres was also very important. The comprehensive plans in certain zooms were among the alternatives that placed the most wetland acres at risk and proposed the least amount of acres for mitigation opportunities.

CUMULATIVE/SECONDARY IMPACTS

The factor specialty group applied ten factors in the evaluation of alternatives for the study area. The ten evaluation factors addressed both social and environmental impacts. Social impacts included (1) infant mortality, (2) road needs, (3) crime rate, and (4) hurricane vulnerability. Environmental impacts included (1) air pollution, (2) water pollution, (3) watershed, (4) wetlands, (5) hydrology, and (6) amount of lands in protected status.

As the dominant land use type shifts from preservation to agriculture to residential to urban, infant mortality typically rises. Likewise, the crime rate increases but the nature of the crimes between rural and urban areas is different. Increased development requires more infrastructure. The increased development, depending on the location, may increase vulnerability of citizens to hurricane-related damages.

Similarly, increased development depending on how and where it occurs may have negative environmental impacts. One of the main reasons the Corps initiated the ADG was to address cumulative environmental impacts in southwest Florida. For instance, the permits of singular projects may have merit on their own, but as they accumulate, the result is cumulative and secondary impacts. This issue reflects the cumulative impacts realized by several other issue categories such as water quality, water management, and avoidance of wetland impacts. The comprehensive plan was generally associated with more negative cumulative and secondary impacts than the other alternatives for the majority of the study area.

RESTORATION/RETROFIT

The factor specialty group applied five factors in the evaluation of alternatives for the study area. These factors addressed the natural system of southwest Florida by restoring natural functions, through removing exotics, decreasing septic tanks, increasing the use of best management practices, and restoring wildlife habitat and historic flowways.

These concepts of restoration/retrofit were addressed throughout the study area. Many of the alternatives discussed restoring flowways, wetlands, and the connectivity of habitats. The

greatest debates and ingenuity of the restoration/retrofit concepts were related to Lehigh Acres and Golden Gate Estates. Alternatives 1, 3A, and 5 of Zoom A proposed strategies of restoration for Lehigh Acres, such as the Three R's (restoration, retrofit, and redevelopment) and ARF (acquire, restore, and fix), respectively. Alternative 2A of Zoom D proposed that east Golden Gate Estates be used for mitigation to help restore flowways and wildlife habitat. Landowners would be able to build rural residences in west Golden Gate Estates while utilizing east Golden Gate Estates for mitigation and restoration purposes. These alternatives received the favor of the factor specialty group.

PUBLIC LANDS MANAGEMENT/USE

The factor specialty group applied one composite factor in the evaluation of alternatives for the study area. This factor evaluated each alternative's compatibility with public land management plans, compatability of adjacent land use with public land management plans, and whether the alternative improved or degraded the resources and public use on public lands.

The factor specialty group determined whether an alternative improved or degraded public lands by viewing the land use type adjacent to the boundary of current public lands. For instance, a residential area adjacent to public lands that need to be managed with prescribed burning would be less compatible than adjacent agricultural activities. The idea is that some land use types buffer public lands better than others. For example, public lands near Belle Meade and CREW Trust were viewed as relatively well protected by Alternatives 1A and 2 in Zoom C because they showed the least amount of development adjacent to these lands. Likewise, the factor specialty group took into consideration indirect impacts of land uses not adjacent to public lands, such as agricultural activities upstream. Criteria associated with land use types (e.g., agriculture) were considered important attributes to differentiate alternatives in considering both direct and indirect impacts. The use of GIS was beneficial in allowing the factor specialty group to identify land use types and their extent of potential impact.